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AGRICULTURAL LIBRARIES INFORMATION NOTES

SEARCHING ENTOMOLOGICAL LITERATURE:

Secondary Services Are The Primary Resources

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The names and descriptions of nearly one million insect species are contained in the world's entomological literature. A relatively few of these are reknowned pests of man and the products of his agriculture and industry; others are used as experimental animals by biologists in the course of their research; and some are known for their beneficial properties.

Because this immense number of insect species affects man in almost every facet of his life, it is easy to see why the information about them must be sought in the literature of nearly every biological discipline and, in turn, why a knowledge of the entomological literature presents an unparalleled challenge to even the seasoned entomologist.

It has been estimated that up to another million or so insect species remain to be discovered and made known to science. Our knowledge of many insects is fragmentary. We have only begun to conduct research that will lead us to a much-needed understanding of insect ecology, the roles that insects play in our environment, and in the control of weed and other insect pests. The literature of entomology will continue to swell in volume and subject matter for the predictable future.

The control and effective search of this vast body of literature can be facilitated to a considerable extent by the informed use of certain literature guides and sources that are within the reach of most librarians and scientists. Many of these guides are discussed in some detail in a paper by Trauger, Shenefelt, and the author: "Searching the Entomological Literature," *Bulletin of the Entomological Society of America*. 20 (4): 303-315, 1974 — this column is an adaptation of the section of that paper on secondary services; it should be consulted for the details that space here will not permit to be included. Librarians and entomologists will find additional guides to the literature of entomology in that article. The authors discuss information sources, guides to the literature, general entomological works, catalogs, government documents, translations, glossaries, directories, and the entomological book trade.

Although browsing through journals is a useful habit to cultivate, the immense scope of the primary sources prohibits fruitful search without the aid of the so-called secondary literature sources. Abstracts, indexes, bibliographies, and reviews as keys to the literature are the most important secondary sources in entomology. The abstracting/indexing journals are continually changing. Some cease publication, new ones commence, and

ongoing ones improve their formats to meet the ever-growing capabilities of mechanized information retrieval to fulfill the needs of their readers.

A highly selective list of these sources with brief summaries are:

A Guide to the World's Abstracting and Indexing Services in Science and Technology (Washington, D.C., Library of Congress, 1963) contains some 1,855 titles originating in 40 countries. Two complete listings, classified and alphabetical, give full information for each entry.

Analysis of Secondary Serial Literature Publications of Interest to Entomologists by Karen J. Patrias (Appendix 7 to *A System – designed entomological information center – a feasibility study. Phase II* by John Graham and Richard Foote, College Park, Entomological Society of America. 1971. 2 v. National Science Foundation Grant No. GN-856. Final Report) The 50 secondary serial publications analyzed represent the world literature.

Current Contents: Agricultural, Food and Veterinary Sciences (Philadelphia, Institute for Scientific Information) consists of reproductions of the tables of contents of about 700 journals. It covers original source publications and is planned to arrive before the journal reaches the reader.

Government Reports Topical Announcements ((GRTA) Springfield, Va., National Technical Information Service) a current-awareness announcement service, consists of complete abstracts of new government-funded reports published semi-monthly in separate and highly defined fields of interest. Three subject groupings are of particular interest to entomologists: Biological and Medical Sciences, Agriculture and Food, and Chemistry.

The largest abstracting service for entomology is *Biological Abstracts*. (Philadelphia, BioSciences Information Service (BIOSIS)). Issued twice monthly, it publishes some 140,000 abstracts per year from more than 8,000 world-wide periodicals. The key to successful use of *Biological Abstracts* lies in knowing how to use the five interrelated indexes. These indexes are BASIC

(Biological Abstracts Subjects In Context), the Author Index, the Biosystematic Index, the Cross Index, and, since January, 1974, the Generic Index.

BioResearch Index, 1965 – (Philadelphia, BioSciences Information Service), a monthly publication, was introduced to provide access to additional research reports which could not be presented in *Biological Abstracts* in the traditional manner. It provides a list of journals reported in each issue and a complete bibliographic reference for each indexed paper from these journals.

In April, 1970, BIOSIS began publishing *Abstracts of Entomology*, (Philadelphia, BioSciences Information Service) which is a compilation of insect and arachnid abstracts and reference citations derived from *Biological Abstracts* and *BioResearch Index*.

BioSciences Information Service (BIOSIS), publisher of *Biological Abstracts*, will conduct custom searches of current literature on an annual subscription basis. This service, referred to as CLASS (Current Literature Alerting Search Service), will provide, semimonthly, a computer print-out of the citations relevant to an individual interest profile.

The *Bibliography of Agriculture* (Scottsdale, Az., Oryx Press) is a monthly index which lists domestic and foreign literature currently received by the National Agricultural Library. The systematically arranged list of citations is followed by sections covering government publications and a list of translations received in the Library. The CAIN system has significantly increased deep-indexing capabilities (see *Agricultural Libraries Information Notes* 1 (12): 2-3).

In 1973, the National Agricultural Library initiated a computer-assisted literature search service. The data base (CAIN) is, essentially, the magnetic tape version of the *Bibliography of Agriculture* and the *National Agricultural Library Catalog* (Totowa, N.J., Rowman and Littlefield). Access to the information in CAIN through computer technology is considerably more flexible than access through the indexes of its printed sources. Subject terms and headings, words

of a document title, and corporate authors may be added for a more complete search. Terminals which provide interactive bibliographic search and retrieval to the CAIN data base for students and faculty are now established in probably one-half of the land-grant institutions in the United States (see *Agricultural Libraries Information Notes* 1 (6/7), June-July 1975; 2 (1): 1-4, Jan., 1976); and 2 (6): 6, Mar., 1976). This means of accessing the CAIN data base is being made available by two private corporations, Lockheed Information Systems and System Development Corp., to any institutions or individuals who have terminals available to them. The reference librarian in any land-grant college or university should be consulted as to the availability of this service. The number and distribution of such terminals is constantly increasing.

Entomology Abstracts (New York, Information Retrieval, Ltd.) publishes, on a selective basis, approximately 9,000 indicative and informative abstracts each year from some 3,400 primary journals.

Two series of *The Review of Applied Entomology*, *Series A: Agricultural*, and *Series B: Veterinary*, (London, Commonwealth Institute of Entomology) classified world listings, give the best coverage of the literature of economic entomology. Their usefulness for searching current information is limited by two factors: their monthly issues are published some four months late and contain only an author index. The subject index is published only in the annual cumulations. Because the *Review of Applied Entomology*, *Section B*, does not provide complete coverage of the literature of medical and veterinary entomology, it is advisable to use the *Tropical Diseases Bulletin* (London, Bureau of Hygiene and Tropical Diseases) as well. This abstract journal publishes approximately 3,500 signed informative and indicative abstracts per year in 25 classes.

Forestry Abstracts (Oxford) covers all aspects of forestry. It is worldwide in scope and publishes over 7,000 abstracts per year from approximately 1,500 periodicals, papers, maps, books, and pamphlets.

Chemical Abstracts (Columbus, American Chemical Society) is published in two parts on an alternating biweekly schedule. Subjects of interest to entomologists include nonmammalian biochemistry, pesticides, fertilizers, and animal nutrition. Indexes which appear weekly are key word, numerical patent, patent concordance, and author.

Dissertation Abstracts International. B: The Sciences and Engineering (Ann Arbor, University Microfilms, Inc.) publishes about 5,000 informative abstracts per year in 43 subject groups.

A useful retrospective source is the *Experiment Station Record* (Washington, U. S. Office of Experiment Stations, v. 1-95; 1889-1948). This abstracting journal includes American experiment station and U. S. Department of Agriculture research as well as important foreign publications.

The Russian *Referativnyi Zhurnal* is a major abstract journal for the world's literature in most branches of science and technology. *Referativnyi Zhurnal: Biologiya* (Moskva, VNIITEI sel'khoz) contains an entomology section which is available as a separate publication.

Bulletin Signaletique d'Entomologie Medicale et Veterinaire is included in section 1b, *Biologie et physiologie animales*, (v. 22-; 1961-), of the French international abstract journal *Bulletin Signaletique* (Paris, Office de la recherche scientifique et technique outre-mer). The entomological section carries about 3,000 abstracts per year. Horn and Schenkling's *Index Litteraturae Entomologicae* (Berlin, Deutsche Akademie der Landwirtschaftswissenschaften, 1963 -) is the most reliable and complete of the early works. It is a revision and expansion of Hagen's *Bibliotheca Entomologica* (Leipzig, W. Engelmann, 1862-63) in which additional references are added and the year 1863 is included to complete the coverage to the time of the starting of the *Zoological Record*.

The *Zoological Record* (London, Zoological Society, 1864 -) is the most comprehensive index to all branches of entomology except economic. While it is usually regarded as being valuable for taxonomy, attention is drawn to the

usefulness of the subject index to obtain information regarding such things as habits, ecology or genetics of insects. Although this index cannot now be used for searching the current literature (the 1969 *Insecta* volume was published in 1973), the planned mechanization of the *Zoological Record* should greatly reduce the time lag.


The *Index to the Literature of American Economic Entomology* v. 1-18: 1905/18-1962 (American Association of Economic Entomologists. Special Publications series) is invaluable. It is the most complete and most useful retrospective citation list of North American economic entomology. It includes literature of the United States, Canada, Mexico, Canal Zone, Cuba, and Puerto Rico. Arranged alphabetically by subject, citations indicate whether the publications have bibliographies, illustrations, keys, etc. The index was preceded by the *Bibliography of the More Important Contributions to American Economic Entomology, 1889-1905*, also published by the Association.

Another useful index is the *Agricultural Index: Subject Index to a Selected List of Agricultural Periodicals and Bulletins* (New York, H.W. Wilson Co., v. 1-49; 1916-1964). It provides practically complete retrospective coverage of agricultural publications of federal and state departments, as well as listing publications of the agricultural experiment stations and the F A O. The *Agricultural Index* was continued as the *Biological and Agricultural Index* (v. 50-; 1964-), a subject index which covers some 145 English-language periodicals.

S. A. Neave's *Nomenclator Zoologicus; a List of the Names of Genera and Subgenera in Zoology from the 10th edition of Linnaeus, 1758 to the end of 1955*, v. 6 (London, Zoological Society) is a comprehensive list which supersedes earlier generic indexes. With the *Zoological Record* and *Biological Abstracts* from 1955 to date, it forms a complete record from 1758. A third supplement, soon to be published, will considerably reduce the need for reference to sources other than the *Nomenclator Zoologicus*. The work is an alphabetical listing of genera, each followed by author's name, the date the name was

established, and the publication in which it was first published.

Two indexing services which are not primarily entomological but are of interest to entomologists are *Index Medicus* and *Science Citation Index*. *Index Medicus*, (Bethesda, National Library of Medicine), a comprehensive index to the world's medical literature, indexed as of January, 1974, either completely or selectively, over two thousand periodicals. Users of the index should become familiar with the publication *Medical Subject Headings* (Bethesda, National Library of Medicine). It is the key to effective use of *Index Medicus* because it gives (1.) the subject headings by which all journal articles are indexed, (2.) cross references from the subject headings not utilized to those which are, and (3.) categorized lists which group related subject headings by broad subject area, and aid in determining the most appropriate heading for a particular need.

Science Citation Index, (Philadelphia, Institute for Scientific Information), an ordered list of references in which each reference is followed by a list of the sources which cite it, and it provides an index to the contents of every issue published during a calendar year of approximately 2,200 selected journals. 

NEW NAL PUBLICATIONS

The following publications should be requested from Information Officer, National Agricultural Library, Beltsville, MD. 20705. Please send a self-addressed mailing label with your request.

CAIN Online User's Guide. April 1976. various p. Free.

Dairy Technology and Production. A list of serials. (Library List no. 100) May 1976. 93 p. Free.

Prince Family Manuscript Collection. A register of their papers in the National Agricultural Library (Library List 101) May 1976. 37 p. Free.



This month we have our first guest editor to initiate a practice we expect to become a feature that will broaden our horizons from time to time.

Appropriately, Dr. Richard Foote is an entomologist which is a profession of direct or indirect interest to almost everyone engaged in agriculture (and everyone else occasionally). He is also very actively involved in editing and publishing, in information storage and retrieval and in data-handling for biologists.

Recently he served as chairman of a liaison committee between the Beltsville Research Center and NAL.

Since 1952 Dr. Foote's career has been in insect taxonomy and he is presently chief of the Systematic Entomology Laboratory of the Insect Identification and Beneficial Insect Introduction Institute (IIBII). With the number of described species approaching one million and an unknown number of millions yet to go, it is obvious why a systematic entomologist should be interested in the problems of data and literature handling. A few of the titles of Dr. Foote's 150 publications indicate he has contributed more than the average share of time to literature problems: *Entomology Looks at its Mission: Information Storage and Retrieval for Entomology; Communication in the Biological Sciences; Species-Level Analysis of Biological Literature for Storage and Retrieval; A System Designed Entomological Data Center*. Dr. Foote is former editor of *Proceedings of the Entomological Society of Washington* and *Journal of Economic Entomology* as well as current editor of the *Journal of the Washington Academy of Sciences*.

Obviously, one with Dr. Foote's involvement with the literature would be concerned about and experienced in the problems of access to it. This is why he has emphasized secondary services and current efforts to improve the

organization of and access to the information useful to all those involved with entomology.

While we welcome Dr. Foote as our guest editor, USDA and NAL do devote most of their entomological attention to protecting our crops and agricultural products from insects. A major portion of the attention to pesticides, methods of biological control, measuring crop damage and post-harvest losses, quarantine and inspection activities, the search for resistant varieties is concerned directly or indirectly with insects and their activities. Insects as pests to be destroyed, even if by their own cousins, is the basis of most entomological research and literature from whatever source while the little beasties continue to at least hold their own. There is a totally different approach which most of us find psychologically unacceptable but is being revived by one of our own staff members. This approach is expressed by a quotation on the title page of a small volume from our historical book collection published in 1885 (*Why Not Eat Insects*, Vincent M. Holt. Field and Tuer, London, 1885).

"Them insects eats up every blessed green thing that do grow, as us farmers starves."
"Well, eat them, and grow fat."

— Dean Gamble
Information Scientist, NAL

NEW SERIALS RECEIVED AT NAL

Agricultural Systems. Barking, Essex, Eng., Applied Science Publishers. v. 1, no. 1, January 1976.

Food Additives Information File. London, United Trade Press. v. 1, no. 1, April 1976.

Maize Quality Protein Abstracts. London, Commonwealth Agricultural Bureaux. v. 1, no. 1, January 1975.

Zashtita na Prirodata (formerly *Priroda i Znanie*) Sofikila, Natsionalen sfuvet na otechestvenikila front, Obshtonaroden komitet za zashtita na prirodata. no. 1, 1975.

IMPROVING SECONDARY INFORMATION SERVICES FOR ENTOMOLOGISTS

by

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It is well known to information scientists that the effective operation of any information retrieval system, whether manual or automated, is conditional on the following factors which must form the basis for system design:

- 1) It is virtually impossible to exercise 100% bibliographic control of the literature for a given subject.
- 2) It is theoretically impossible for a subject-oriented information retrieval system to operate at both 100% "recall" and 100% "precision."
- 3) Any system will be of questionable value if it cannot retrieve 95-100% of all the information contained in the system that is relevant to an individual's needs.
- 4) A system will be of questionable value if it returns too much irrelevant information along with the relevant.
- 5) For most published biological information, it would be unwise not to include source citations along with the data.
- 6) Any system may be expected to fail if not enough intellectual effort is devoted to codifying (indexing) the information.

On one hand, in the recent rapid growth in the number, scope, and quality of systems for

handling biological information, these restrictions appear to have been accommodated rather well. On the other hand, biologists who use these systems in ever-increasing numbers appear to experience considerable difficulty in acquiring information closely associated with the genera and species (the taxa) of concern to them.

By means of cooperative agreements with the U. S. Agriculture Research Service (ARS), and in cooperation with the Entomological Society of America, personnel of the Department of Entomology, University of Wisconsin, under the direction of the senior author, have mounted three "pilot projects" to demonstrate some rather innovative end-products of retrieval.

MICRO-ABSTRACTS

The first was based on a relatively complete file of literature concerning the wasp genus *Apanteles*, all of whose 1,150 species are parasitic on other insects.

It was necessary to abandon the traditional practice of treating a document, no matter how long or how complex in subject content as a single unit. The process of simply assigning a large number of descriptive terms to represent the complete content of a document results in an impractical amount of noise.

It was necessary, therefore, to fragment the full texts of documents into information units of reasonably limited and homogeneous subject content and index each unit individually, repeating the source citation with each fragment. This principle is by no means new, but it is seldom seriously considered because of an intuitive (or real) fear that the costs would be prohibitive. The procedure was to isolate all information in a document pertaining to each species, and then to further eliminate noise, apply a very simple system of controlled-language subject headings to further differentiate between general categories of information. The use of subject terms weakens a system, but we felt that careful use of such terms in a relatively uncomplicated manner while reducing the recall

potential, hopefully, by no more than 5%, would further reduce noise by roughly 90%. This, for example, would enable the user who wanted information on the adult emergence times of *Apanteles melanoscelus* in New England, not to receive it hidden among taxonomic descriptions, rearing methods, chromosome counts, muscle physiology, tissue-staining techniques, etc. However, if a user wanted to eliminate the risk of missing information because of the inefficiency of subject headings, he would have the option of omitting subject designations in his request and receiving all information in the system on a given species or higher taxon.

The end product of retrieval consists of indexed micro-abstracts, each separately dealing with *all* of the information in a given document about *each* of the species discussed. Examples and further details will be found in *BioScience* (vol. 22, no. 11, pp. 651-655, Nov., 1972).

For most species, so little has been published to date that retrieving the complete file on a given species is probably the most efficient way to obtain subject information on the species, no matter how specific the information desired. For species on which a great deal has been published, however, some subject differentiation is necessary.

INDEXING VOCABULARY


Consequently, the development of a vocabulary accompanied the exercise described above. The vocabulary, begun from word lists using a preliminary thesaurus of entomology being developed in ARS (see ESA THESAURUS OF ENTOMOLOGY in this issue) provides a simple subject breakdown permitting the retrieval of 10's of units, rather than 100's or 1000's, when the complete file of a species is too large to examine in its entirety. This controlled indexing vocabulary, based on the literature of three species of *Apanteles*, is described fully in the September, 1973 issue of the *Bulletin of the Entomological Society of America* (vol. 19, no. 3, pp. 147-152).

DEEP INDEXING AND FULL TEXT

Guides to sources of information fill many scientists' needs, but an ideal situation provides full text (*i. e.*, data) along with the sources. No existing information service available to biologists today provide a combination of the two. Nor is any service capable of providing information reliably at the species level or in required depth of subject-matter indexing.

A third pilot project was designed in 1974 to make possible the provision of data as well as data sources from a literature base indexed deeply and with precision. Using terms available in the aforementioned ESA *Thesaurus of Entomology*, three professional indexers with unlimited access to subject-matter authorities indexed the 1974 issues of two of the three major journals published by the Entomological Society of America — the *Journal of Economic Entomology* and *Environmental Entomology*. This indexing exercise was also the source of a large number of candidate terms which were considered for entry into the ESA thesaurus.

Preliminary arrangements have been made with the Research Department of BIOSIS (Biological Sciences Information Service) to test this deep indexing by asking selected BIOSIS users to compare the output with the services they normally provide, based on the same set of articles. Consideration has also been given to training (and eventually requiring) authors to index their own articles prior to publication to help avoid what appear to be rather high costs associated with an extension of this text.

Thus, some guidelines have been presented to the information science community toward solving problems as some biologists see them. However, to date none of the concepts developed in these three pilot projects has been implemented. Improvements in the services of secondary information sources are, however, with the continued increase in the bulk of entomological literature and the complications that accompany it. 

THE ENTOMOLOGICAL SOCIETY OF AMERICA : ITS PUBLICATION AND SCIENTIFIC INFORMATION PROGRAMS

The Entomological Society of America is the nation's foremost scientific society working in behalf of entomologists in all disciplines. With more than 6,000 members, it comprises five geographically-oriented branches (including Alaska and Hawaii) and six discipline-oriented sections. Its national headquarters is located at 4603 Calvert Road in College Park, where it employs an Executive Secretary, Wallace P. Murdoch; a Managing Editor, James S. Packer, and a number of additional workers who process the membership and program affairs of the Society. Much of the work of the Society is carried on in 14 standing and a number of special committees.

The Society produces, or shares in the production of, a number of publications which have established standards throughout the world for scholarly writing and scientific content. The periodicals and books in which primary literature appears are:

Journal of Economic Entomology. v. 1 (Feb. 1908) — Six issues per year, with emphasis on the control of arthropods.

Annals of the Entomological Society of America. v. 1, no. 1 (Mar. 1908) — Six issues per year, largely general entomology, taxonomy, and physiology.

Environmental Entomology. v. 1, no. 1 (Feb. 1972) — Six issues per year, containing articles pertinent to ecology.

Bulletin of the Entomological Society of America. v. 1 (Mar. 1955) — A quarterly, this publication contains society announcements, news, and articles of broad interest.

Miscellaneous Publications. v. 1 (Oct. 1959) — Issued irregularly, this series publishes symposia,

monographic works, and taxonomic revisions.

Thomas Say Foundation. Publications. v. 1 (1916) — Irregularly issued and devoted to the publication of book-length monographs in insect systematics.

The following publications of special interest to entomologists are also products of Society activities:

Annual Review of Entomology. This series of review articles updates entomologists in every discipline.

Pesticide Handbook — Entoma. 1975-76. 290 p. Pub. biennially. Contains pertinent information regularly updated, on pesticides, pesticide application equipment, and pesticide manufacturers.

Index to the Literature of American Economic Entomology. 18 v. (Jan. 1905-Dec. 1959) — No longer being published, this series of volumes comprises a very important secondary literature resource for entomologists.

History of Entomology. Annual Review of Entomology, supplemental issue. 1973. 517 p.

Pesticide Index. 5th ed., 1975. Triennial.

Bibliographic Araneorum. Pierre Bonnet. v. 1, 1945 (repr. 1968) 832 p.

Comparative Anatomy of the Male Genital Tube in Coleoptera. D. Sharp and F. Muir (Transactions. Entomological Society of London, 1912) Reprinted 1969. 304 p.

Pesticide Reference Standards. Committee on Insecticide Reference Standards of the Society.

Commercial and Experimental Organic Insecticides. E. E. Kenega and C. S. End. 1974 (Special Publication 74-1)

Consolidated List of Approved Common Names of Insecticides and Certain Other Pesticides. Committee on Insecticide Terminology of the Society. 1974.

Common Names of Insects. Rev. ed., 1975. 36 p.

Brochure – Entomology . . . An Exciting Scientific Career. 1975.

Membership List. Entomological Society of America (Pub. in June *Bulletin* 1974)

Program, Annual Meeting of the Entomological Society of America. 1975.

The Serial Literature of Entomology – A Descriptive Study. (no date)

A Manual for Determining Small Dosage Calculations of Pesticides and Conversion Tables. J. W. Neal, Jr., 1974. 72 p.


Integrated Pest Management: Rationale, Potential Needs, and Implementation. Coordinated by E. W. Glass. 1975. 141 p. (Special Publication 75-2)

Rising publication costs, especially those for typesetting, have been responsible for the Society becoming involved in an ongoing experiment with the NSF-sponsored Editorial Processing Centers project. One issue of *Environmental Entomology* will be produced during 1976 involving typesetting, page makeup, proofreading, and correcting with computer assistance.

A Special Committee on Information Retrieval was appointed in 1968 to investigate the feasibility of the Society becoming involved in the establishment of a scientific information storage and retrieval system for its members. The Committee issued two reports funded by two separate grants from the National Science Foundation to the extent of \$120,000. The first, essentially the result of a Society-wide questionnaire, explored the literature habits and needs of entomologists. The second report issued in two parts, a) presented in detail a plan

for the establishment of a scientific literature retrieval system, and b) compiled a collection of literature resources to assist entomologists with their information-seeking problems. These reports are available from the National Technical Information Service, Springfield, Va. as follows: Phase I: A System-Designed Entomological Data Center – A Feasibility Study (NTIS No. PB-186 470). Phase II: A System-Designed Entomological Information Center – A Feasibility Study. Vol. 1, System Design, Environment, and Programs (NTIS No. PB-204 937).

Volume 2 of the Phase I report, an appendix to the system design, contains substantive help for entomologists under the following headings: Serial literature of entomology, entomological publications originating in Federal and State institutions, literature of value to extension entomologists, lists of translations and literature supplies, analysis of secondary serial literature, and ESA information directory, the beginnings of an entomological thesaurus (see elsewhere this issue), and an automated taxonomic catalog. (A few reprints of this collection are available from Richard H. Foote, Bg. 003, BARC(W), USDA, Beltsville, Md. 20705).

The Entomological Society of America, in vigorously pursuing its publication and education program in behalf of entomologists everywhere, continues innovative activities in a number of areas of value to the profession it represents. 



ENTOMOLOGICAL ACTIVITIES OF THE DATA SYSTEMS APPLICATION DIVISION, ARS

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Although the Data Systems Application Division (DSAD) of the U. S. Agricultural Research Service (ARS) has been in existence for some time, the Scientific Branch was not established as a separate entity until 1974. Since then, the number of projects undertaken by the Branch has grown at a very rapid rate. At present, more than 40 projects have been planned and/or activated to meet the needs of ARS scientists.

The following collection of brief abstracts indicates the Division's activities of interest to the entomological community.

CURRENT LITERATURE AWARENESS SERVICE

Described in some detail by Hilary D. Burton in vol. 2, no. 3 (March 1976) of this publication, this service is a nationally utilized, multidisciplinary bibliographic information dissemination program serving more than 1,500 ARS scientists. It provides users with citations to the published literature in all areas of agriculture on a recurring basis and/or retrospective search capability to 1969/1970. The service is very effective in eliminating manual searches, provides extensive coverage, and improves document delivery capabilities.

DIRECTORY OF ARS-AUTHORED PUBLICATIONS

This project, guided by National Technical Editing Staff, ARS, involves the production of a directory of all ARS-authored publications, using the Famulus System.* Currently, there is no bibliography which includes all ARS publications. Eventually the file may contain other research outputs such as patents, germplasm releases, etc. The file is updated quarterly and the cumulated file is distributed to various ARS regional offices,

information units, and outside agencies as requested. The file is useful both as a research file for subject searching and as a management file for research assessment and planning.

BEE LABORATORY BIBLIOGRAPHY

Comprising a collection of the world's literature on bees, this file, under the direction of H. Shimanuki, Chief, Bioenvironmental Bee Laboratory, Plant Protection Institute, Beltsville Agricultural Research Center (BARC) has become too large to be searched effectively by manual means. Additionally, since there is considerable interest in the file outside of the Beltsville area, computerization will enable the file to be used by individuals in any location. Full citations, classification numbers, and annotations, where available, are being processed.

BACILLUS THURINGIENSIS

Howard Dulmage, Cotton Insects Research Laboratory, Brownsville, Texas, has initiated a cooperative research project on the comparative effectiveness of 300 isolates of *B. thuringiensis* to control 25 economically important cotton pests. The system creates, maintains and searches a data base on test results contributed by a number of geographically isolated collaborators.

DISINSECTION OF AIRCRAFT

The collection, storage, and retrieval of test data on aerosols are the objectives of a project initiated by W. N. Sullivan, Agricultural Environmental Quality Institute, BARC. The system will give scientists more efficient, flexible, responsive mechanisms for compiling, searching, and analysing test data for freeing aircraft of pest and disease-bearing insects.

CHEMICALS COORDINATION

The development of a data base comprising chemical and biological screening data reported by three ARS laboratories is under professional development by E. M. Osborne, Agricultural Environmental Quality Institute, BARC. The

information contained in this file, to which is to be added the data on all agricultural chemicals tested by ARS, will afford workers a three-fold advantage: a) more extensive and timely coverage of data, b) faster and more flexible compilation of reports, and c) an authoritative standard for naming chemical compounds used in agriculture. The names and definitions have already become those required for use in all ARS manuscripts.

COMMON NAMES OF INSECTS

This data base comprises accepted codes, distribution, scientific names, and common names in five languages of insects and mites of the Western Hemisphere. The arthropods are those of particular interest because they are of prime economic importance or commonly encountered or possess unusual attributes. The automation of this list, pioneered by Judson V. McGuire of DSAD, was originally conceived to assist the Entomological Society of America publish an annual update of ESA-approved common names.

BENEFICIAL INSECTS

Preliminary discussions with Robert F. Schroder, Beneficial Insect Introduction Laboratory, Insect Identification & Beneficial Insect Introduction Institute (IIBII) BARC, are under way for the purpose of automating records of the importation, movement, and release of beneficial organisms in the United States. The transportation, quarantine, identification, and rearing of these beneficial organisms guarantee a large volume of valuable records which, under present circumstances, are extremely difficult to handle and evaluate.

SEED IDENTIFICATION

In cooperation with Charles R. Gunn, a system providing direct and indirect aids to the identification of biological specimens is being developed. Although using seeds as the primary object, the system offers a high potential for application to insect identification. It comprises programs to be used for specimen identification, key construction, description printing, taxon-to-taxon comparison, preparation of "inverted

descriptions, and production of punched card field keys.

NEMATODE TAXONOMY

With A. Morgan Golden, Nematology Laboratory, Plant Protection Institute, BARC, the Branch has developed a yet-to-be implemented system for managing the data associated with a rapidly growing collection of more than 18,000 nematodes. Interactive searching of this data base will greatly facilitate responsiveness to requests for information on the taxonomy and distribution of nematodes of the world. Nematodes are coming to be recognized as potential effective parasites of some of our important insect pests.


CATALOG OF NORTH AMERICAN COLEOPTERA

A series of computer programs is being designed to store and retrieve large amounts of taxonomic and related data leading to the production of a published catalog of the North American beetles. This data base will be searchable as well, so that the taxonomist as well as the non-taxonomist will be afforded a continually up-to-date indexing tool to post literature, an authoritative source for the current status of all scientific names, and an indication of the sizes of the beetle fauna and the geographic ranges of taxa.

INSECT TRANSMISSION OF ANIMAL DISEASES

The Branch is working with Robert H. Jones, Arthropod-borne Animal Disease Laboratory, Denver, Colorado, to implement an information system that will establish a data base of insect rearing data, results of tests to control insects and disease, and insect assays. This file will enable workers to evaluate more effectively all relevant information they collect in the conduct of their multidisciplinary experiments.

A number of additional data bases being maintained by this Branch contain information of interest to entomologists, although their primary objectives are in other disciplines. A data base containing information related to Current Research Information System (CRIS) is rather heavily entomology-oriented. Files on

small grains and grain storage deal in part with entomological data, and a project now being developed for handling information on pecan breeding, diseases, and insects will be of interest to entomologists. 

*Famulus is a system of computer programs designed to manage small to medium size information files.

WORLD OF CAIN

Maydelle Stewart
Indexing Section, NAL

A CAIN online training class was held May 10-14, 1976 at the Steenbock Library, University of Wisconsin, Madison. The instructor, Charles Gilreath, Texas A & M University Library, was assisted by Maydelle Stewart, National Agricultural Library, and Jerry Caswell, Steenbock Library. Besides training in searching the CAIN data base by the Dialog and Orbit systems, information was provided on cost accounting of online services and participants shared experiences in this area. Many thanks are due David Oyler, Director of the Steenbock Library, and his staff for arranging most convenient and pleasant accommodations.

The following people attended:

Wayne Collings, University of Nebraska,
Lincoln, NE 68508

Donna Hudson, University of Wisconsin,
Madison, WI 53706

Richard G. Hutchins, Northeast Technical
Service Center, USDA, SCS, Broomhal, PA
19008

K. L. Janeczek, North Dakota State University,
Fargo, ND 58102

Carol Jones, Michigan State University, East
Lansing, MI 48823

Mary Louise Kovacic, Cargill, Inc.,
Minneapolis, MN 55402

Katherine Markee, Purdue University, Lafayette,
IN 47907

Marilyn Montgomery, Mankato State University,
Mankato, MN 56001

Jo Prust, University of Wisconsin, Madison,
WI 53706

Dorothy Webber, Forest Products Laboratory,
USDA, FS, Madison, WI 53706

James Zerwick, Michigan State University,
East Lansing, MI 48823

The *CAIN ONLINE USERS GUIDE* is available free of charge. Please send a self-addressed mailing label with your request to:

Information Officer
National Agricultural Library
Beltsville, Md. 20705

"Apiculture Issue" *Associates NAL Today*.
New series, v. 1, no. 1/2, January/March 1976.
48 p. \$2.50. Contents: A special bee library and
a special bibliography by Julia S. Merrill. Bee
culture in Maryland by Dewey M. Caron.
Beekeeping courses at land-grant universities by
Alfred D. Straughan. Ethylene oxide fumigation
for the bee industry by H. Shimanuki. Bee
pollination by E. C. Martin. Hybridization of
honey bees in South America by Marshall D. Levin.
Heritage of apicultural literature, a bibliography
of pre-1870 monographic imprints by
Alan M. and Donna Jean Mason Fusonie.

Apply to: Executive Secretary,
Associates NAL, Inc.
10301 Baltimore Blvd.
Beltsville MD 20705

A THESAURUS OF ENTOMOLOGY

In 1968, the Special Committee on Information Retrieval of the Entomological Society of America proposed the writing of a thesaurus of entomology as an aid to secondary information services in indexing the literature of entomology. The particular terminology used by entomologists, and aids to the selection of indexing terms for the names of insects, pesticides, etc., could be made more readily available, and a thesaurus would lend more authenticity to the use of such terms by having professionally guided input in its compilation.

An initial hierarchical version of the thesaurus was produced in 1970 but was not made available for general use because it represented an incomplete list of largely unevaluated candidate terms and lacked an alphabetical section.

An expansion of that initial version is currently being undertaken in ARS. The framework of the completed thesaurus is built across most of the subject matter of entomology; each of the major headings, listed below, are divided into from two to ten subdivisions:

External Anatomy, Morphology

Systematics, Evolution, Nomenclature

Embryology, Growth, Development

Physiology, Biochemistry

Genetics

Ecology

Social Insects

Protection Against Arthropods

Economic and Applied Aspects of Entomology

Methodology

Diseases, Disorders


Fields of Science

Geography

Names of Insect and Mite Families

Thesaurus conventions recommended by UNESCO and COSATI are being employed in the hierarchical section, including the use of narrower, broader, and related terms (NT, BT, RT), use (U), use for (UF), SEE, SEE ALSO, and scope notes (SN). A second section contains an alphabetical arrangement of all broader and narrower terms presented in the form of an index to the hierarchy. For the first time, a rather comprehensive list of common and scientific names of insect and mite families is being presented.

As each individual section has been formulated, the terms have been submitted to selected subject – matter referees for their comments on appropriateness, accuracy, and precise current usage. The deep indexing exercise mentioned elsewhere in this issue (see article by Shenefelt & Foote, p. 6) provided numerous candidate terms direct from current serial literature on the ecology, damage, & control of insect pests, and an extensive amount of cross referencing has been done among the major and minor sections.

The completed thesaurus will appear as a “special publication” of the Entomological Society of America, and will eventually be available from the College Park, Md. headquarters of the Society. 

World Food Problems, An Interdisciplinary View. Compiled by Kenneth Marks, Gary Fouty, John Galejs, John Kawula, John McNee, Don Pady and Sara Peterson in cooperation with the National Agricultural Library. Ames, Iowa, Iowa State University Library, June 1976. 36 p. (Series in bibliography no. 5) \$3.00 (Service fee) Order from Photoduplication Office, Iowa State University Library, Ames, Iowa 50011.

Copies will be mailed at no cost to ARL members and land-grant colleges.

INTERNATIONAL REGISTER OF COMPUTER PROJECTS IN SYSTEMATICS

The International Association for Plant Taxonomy and the Society of Systematic Zoology are the prime sponsors of a new *International Register of Computer Projects in Systematics*, which is being compiled by Dr. Theodore J. Crovello in the Department of Biology at Notre Dame University. For the purposes of this register, systematics includes taxonomy, biosystematics, evolution, and biogeography of all biological taxa. The *Register* also welcomes information about nonbiological data files of use to systematics (e. g., the long-range weather data tapes of the U. S. Weather Bureau).

As in the first such *Register* (see *Taxon* 19:63-76, 1970), this second compilation will include systematic information on computerized data files about living organisms, preserved organisms, experimental data, literature files, etc. It also welcomes information on well-written and documented computer program packages (other than basic statistics) that are of value for systematic research and/or teaching.

Anyone using computers in systematics may request as many copies of the *Register* questionnaire as he has separate projects or program packages. Systematics will be materially assisted by the avoidance of duplication of effort and by contributing to the *Register's* attempts to minimize the incompatibility of computerized systematic data, or programs generated on specific projects. Contributors to the *Register* will be helped by the possibility of discovering that someone else may already have written the program or computerized the data they need. By the same token, the data and programs contributed will be useful to others.

The *Register* will be computerized and available for customized search requests by September 1976. As demand warrants, published summaries will also appear. This *Register* will be compatible with a similar *Register* for all of biology that Crovello is organizing for the American Institute of Biological Sciences.

Please address all suggestions, requests for information, and for Register Questionnaires, to:

Theodore J. Crovello, Chairman
International Register
University of Notre Dame
Department of Biology
Notre Dame, Indiana 46556



AGRICULTURAL FACT BOOK

The newly-revised *Fact Book of U. S. Agriculture* is out. The book is a reference on agricultural trends for persons who speak and write about agriculture.

Updated for the first time since 1972, the book is divided into five major subdivisions:

Farm Production Supplies—deals with the industries, services and goods affecting agricultural production;

The Farming Operation—covers the farm business itself;

Food Marketing—describes the system that converts farm products into consumer products ready for domestic and foreign use.

Agricultural Services—deals with activities of USDA and other governmental and private agencies which support modern agriculture;

Improving the Rural Social Environment—covers population, environment, and social problems of smaller towns and the open country.

The publication is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, for \$1.90 per copy.

AERIAL PHOTO-MAPS OF YOUR FARM


The ASCS will provide photo-maps of individual farms or given areas for use by property owners, local governments, etc. For further information contact the local county ASCS office or write to the Field Office in Salt Lake City.

**THE ENTOMOLOGY LIBRARY AT THE
U. S. NATIONAL MUSEUM
OF NATURAL HISTORY
SMITHSONIAN INSTITUTION
WASHINGTON, D. C.**

Literally hundreds of separate specialized collections of entomological literature exist throughout the United States, one at nearly every center that conducts meaningful activities associated with insects. One of the most comprehensive of these, largely oriented toward insect systematics, is the entomology library maintained to supply the information needs of 40 insect taxonomists located in the U.S. National Museum of Natural History, Smithsonian Institution (SI). It contains over 18,000 volumes and an unknown number of separates comprising primary journals, text and reference books, collected works, and technical papers.

Set in the center of the Smithsonian's National Collection of Insects in the west wing of the Natural History building, the library is an indispensable literature resource for 12 Smithsonian and 28 ARS scientists who work on the systematics, taxonomy, and identification of insects from all over the world. Nominally a branch of the SI library, it contains NAL as well as Smithsonian holdings. The primary journal holdings in systematics are quite complete, kept well up-to-date, and an effort is made to fill gaps as needed. An imposing array of reference works is maintained, and new text books and current literature other than the primary journals are added to keep this special collection complete. Many of the 18,000 + volumes have been purchased by the U. S. Department of Agriculture; current acquisitions are supported by a large proportion of ARS funds provided by the Systematic Entomology Laboratory.

The collection is maintained by Janet Carter, who acts as general reference librarian in referring requests to specialists or to the main library, in handling interlibrary loans, and in recataloging the SI collection. A rather large proportion of bound volumes reside in the work rooms of the specialists, who use them on a daily

basis as working tools. This situation requires that a great deal of careful attention be paid to "bookkeeping" aspects by the librarian in charge. For many years all the library holdings were classified under the Dewey Decimal Classification Scheme except for journals filed by title. In 1965, the SI changed to the Library of Congress Classification Scheme and work was begun to reclassify the SI entomology holdings. 

A NEW NUTRITION BIBLE

Nutritive Value of American Foods in Common Units (Agriculture Handbook 456) by Catherine F. Adams was recently published by the Agricultural Research Service. This publication provides values for various foods as measured in household measures and market units.

The Handbook includes data on approximately 1,500 foods in the form of menu items, snacks, and market products. The nutritive data includes water content, food energy (calories), protein, fat, carbohydrate, five mineral elements (calcium, phosphorus, iron, sodium, and potassium), five vitamins (vitamin A, thiamin, riboflavin, niacin, and ascorbic acid), total saturated fatty acids, and two unsaturated fatty acids (oleic acid and linoleic acid).

The new Handbook updates the information in *Composition of Foods* (Agriculture Handbook 8), last revised in 1963 and long the Department's bible on nutrition information. *Composition of Foods* provides information on foods in 100-gram edible portions or one pound units. *Nutritive Value of Foods* provides information on the same foods, but does it in common household measures—one cup or 10 nuts or one ounce, etc. In addition, the new handbook provides an analysis of the saturated and unsaturated fat content of the same foods. All told, *Nutritive Value of Foods* contains a hefty amount of nutrition information. You can buy a copy from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402, by sending a check or money order for \$5.15.

SOME SELGEM APPLICATIONS

Recognizing the need for an automated system of handling collection data associated with the millions of zoological and botanical specimens deposited in natural history museums, the Smithsonian's Information Systems Division has written a set of more than 25 computer programs which collectively comprise the information management system SELGEM (*SELf-Generating Master*).


As to be expected, SELGEM is a flexible system particularly well adapted to handling natural history data, not only for research but for collection management purposes. For example, to date six departments of the U. S. National Museum of Natural History (USNMNH) have recorded about 450,000 SELGEM lines of data in the categories of collection management, taxonomy, bibliography, geography, site conditions, specimen characteristics, and key words, this process being limited principally by facilities and personnel available for the input function.

At present, SELGEM is being used for specimen data handling and collection management in more than 60 universities and museums throughout the world. Of these, 12 are devoted to insect data alone, and another ten very probably include insects in broader data bases.

An outstanding entomological application of SELGEM at the USNMNH, described in the *Coleopterists Bulletin* (vol. 30, no. 1, pp. 1-32, 1976), employs specimen-related data in research on the biosystematics of Central American ground beetles. Using data obtained from literature, field notes, specimen labels and specimens themselves, the investigators have been able to retrieve and associate data from a combination of 62 data categories to achieve comparisons and evaluations that have taken others literally years to accomplish.

Another SELGEM-oriented project at USNMNH is the production of a computerized taxonomic catalog of the Hymenoptera (bees, wasps, ants, etc.) of North America. The data is being

organized by the Hymenoptera specialists of the Smithsonian's Department of Entomology and the Systematic Entomology Laboratory of ARS. The objective of that project is to typeset the catalog by GPO linotron for publication by the Smithsonian Press. At the same time the data base for that catalog will have search capability. The project is described in the *Bulletin of the Entomological Society of America* (vol. 20, pp. 24-29, 1974).

Through the cooperation of the Association of Systematics Collections, limited courses of instruction in the use of SELGEM and its applications will be initiated by the Smithsonian during 1976 and, if successful, will be extended to include any potential user. 

BICENTENNIAL GARDEN

FOR ALL THE PEOPLE

A new herb garden is being planned for the National Arboretum, the 415 acre area in Northeast, Washington, D.C., which is operated by the U. S. Department of Agriculture. The Herb Society of America will build the \$250,000 herb garden at the Arboretum as a gift to the American people.

A formal "knot" garden with plants arranged in intricate patterns resembling various kinds of knots is planned as well as speciality sections for medicines, flavoring, oils, dyes, teas, and herbs. Some of the herbs will be those used by the earlier settlers and the Indians in this country. The garden's size (a little less than an acre) will accomodate fairly large groups for visitors to study the plantings. The educational program at the Arboretum will be expanded to include herb culture and uses.

The first stages of the garden are expected to be ready for viewing in mid-summer of 1977, in time for the 50th anniversary celebration of the National Arboretum.

USDA 1145-76

NEW PUBLICATIONS OF INTEREST TO ENTOMOLOGISTS

AIBS Directory of Bioscience Departments and Facilities in the United States and Canada. 2nd edition. Peter Gray, ed. 688 pp., \$25.00 (\$17.50 to AIBS members). Contains an alphabetical and geographical listing of 1,188 degree-granting institutions, 2,367 bioscience departments, and 30,000 faculty members grouped by department and title, degrees.

All-Out Food Production: Strategy and Resource Implications. W. P. Martin, ed. (ASA Spec. Pub. No. 23). Available from the American Society of Agronomy, 677 South Segoe Road, Madison WI 53711.

American Biology Teacher. April 1976. vol. 38, no. 4, published by the National Association of Biology Teachers, 11250 Roger Bacon Dr., Reston, VA 22090, is devoted to the subject of entomology and its use in the biology classroom. Single copies of this special issue can be obtained from NABT's Reston office for \$1.75.

The May issue of ABT (vol. 38, no. 5) contains a lengthy listing of resources for teaching entomology. The list has been compiled from the "Catalog of International Materials," of the Entomological Society of America's audio-tutorial package entitled "Entomology: Toward More Effective Teaching." For more information, write to Vernon J. Tipton at the Center for Health and Environmental Studies, Brigham Young Univ., Provo, Utah 84602.

An Annotated Compendium of Insect Sex Pheromones, by M. S. Mayer and J. R. McLaughlin, Florida Agr. Exp. Sta. Monograph Series no. 6, University of Florida, IFAS, Building 440, Gainesville, FL. \$0.75.

Arthropod Vectors of Disease, by J. R. Busvine, discusses most of the major arthropod-borne diseases under the headings History and Importance, Nature of the Disease, the Parasites, the Vectors, and Treatment and Control. Studies in Biology no. 55, Institute of

Biology. 67 pp. Available from Edward Arnold (Publishers), Ltd., 25 Hill St., London W1X 8 LL. Distributed in the United States by Crane, Russak & Co., Inc. 347 Madison Ave., N.Y., N.Y. 10017.

Bees and Beekeeping. Roger Morse. Cornell Univ. Press, Ithaca, N.Y. 281 pp. \$13.50. This book is conveniently conceived for classroom use and is adequately researched. Pheromones and social order are discussed logically.

Butterflies in My Stomach. Ronald Taylor. Woodbridge Press, Box 6189, Santa Barbara, CA 93111. \$8.95. A discussion (and collection of recipes!) that may not whet your appetite, but provides a well-documented story of the gustatory relationship between man and insect through the ages. He includes serious proposals for the development of insects as nutrients on a commercial scale.

Catalog of the Imperial College of Agriculture, University of the West Indies. 8 vols. G. K. Hall & Co., 70 Lincoln St., Boston, MA 02111. \$545.00. This catalog comprises 130,400 library cards reproduced intact on 10 x 14-inch paper. Because much of the literature contained in this catalog is ordinarily difficult for entomologists to locate, this guide will be a valuable literature resource.

Coevolution of Animals and Plants, by Lawrence E. Gilbert and Peter H. Raven, eds. 246 pp., \$12.50. A report of Symposium V conducted during the First International Congress of Systematic and Evolutionary Biology, Boulder, Colo., Aug., 1973. Available from Univ. Texas Press, Austin and London.

The Connecticut Entomological Society 25th Anniversary Memoirs. R. L. Beard, ed. New Haven, Conn, Connecticut Entomological Society. 322 p. Free. Comprises 14 contributions, mainly of historical interest.

Corn Rootworms: Laboratory Rearing and Manipulation, ARS-NC-28. An 18-page booklet by the Agricultural Research Service. For a copy, write to T. F. Branson, Northern Grain Insects

Research Laboratory, USDA, ARS, Brookings, SD 57006. Free.

Ecology and Control of Vectors in Public Health, Twenty-First Report of the WHO Committee on Insecticides, Technical Report Series 561, World Health Organization, Geneva, Switzerland, Annual subscription \$31.50.

History of Entomology in the Pennsylvania Department of Agriculture, A. G. Wheeler and Karl Valley. Harrisburg, Pa. Pennsylvania Department of Agriculture, Bureau of Plant Industry, 37 pp.

Insect World Digest (6x year). Available on an annual basis for \$10 (individuals) or \$15 (institutions) from Data Courier, Inc., 620 So. 5th St., Louisville, Ky. 40202. Edited by Ross H. Arnett, Jr., this magazine presents a unique look at the many fascinating forms of insect life.

Insects Affecting Important Native Shrubs of the Northwestern United States, by M. M. Furniss and W. F. Barr. U. S. Forest Service. General Technical Report INT-19. Intermountain Forest & Range Experiment Station, Ogden, UT 84401. Free.

Interdisciplinary Research to Develop Integrated Pest Management Systems, a symposium held at Iowa State University, has been published in the *Iowa State Journal of Research* as a separate part (vol. 49, no. 4, pt. 2). 202 p. \$2.00. Available from the Iowa State University Press, Ames, Iowa.

Major Crop Pests in Peninsular Malaysia, by A. Yunus and A. Balasubramaniam. Malaysia. Ministry of Agriculture Div. 1975. 182 p. Agriculture and Rural Development. (Bull. no. 138.) \$3.00. Available from Publications Unit, Ministry of Agriculture and Rural Development, Jolan Swettenhom, Kuala Lumpur.

Manual of Scientific Illustration. Charles S. Papp. 2nd ed. 350 pp. \$22.00. Available from American Visual Aid Books, P.O. Box 28718, Sacramento, CA 95828. Contains much new

material of interest to entomologists.

Melsheimer Entomological Series, nos. 18, 19, and 20 have recently been made available by the Entomological Society of Pennsylvania, 106 Patterson Bg., University Park, PA 16802. The titles of these three numbers are as follows:

No. 18 -- *Malaise Trap: A Survey Tool for Collecting the Adult Stage of Gypsy Moth Parasitoids*.

No. 19 -- *Observations on the Cherry Scallop Shell Moth, Hydria prunivorata, in Pennsylvania*.

No. 20 -- *Sex Pheromone in the Flesh Fly, Sarcophaga bullata*.

Pesticide Residues in Food. Geneva, Switzerland, World Health Organization, 1975. (Tech. Rept. Series 574.) Available from United Nations Bookshop, New York, N. Y. 10017 (retail only)

Proceedings of the First International Working Conference on Stored-Product Entomology, held in Savannah, Ga. in 1974. Available from Dr. Robert Davis, Stored Product Insects Res. & Dev. Lab., ARS, USDA, P. O. Box 5125, Savannah, GA 31403. \$7.50. Its 705 pages contain the results of 50 symposia and 27 submitted papers.

Sphecids Wasps of the World, A Generic Revision, by R. M. Bohart and A. S. Menke. 600 double-column pages. \$35.00. University of California Press, Berkeley 94720. This volume provides a new foundation on a world basis for much-needed taxonomic revisions of individual genera of sphecids wasps.

Urban Entomology. Walter Ebeling. 695 p. Available from Publications, Agricultural Sciences, University of California, 1422 S. 10th, Richmond, CA 94804. \$27.50. California residents add 6%. Deals with biology and control of arthropod pests of the urban community and recreation areas. Venomous arthropods and snakes are fully treated.

Worterbuch der Biologie; Insekten, by Von W. Jacobs

SYMPOSIUM

The Associates NAL, Inc. are sponsoring a 1-day Bicentennial Symposium on *Heritage of Agriculture in Maryland* July 30, 1976.

Registration: \$10.00 members; \$15.00 non-members. Inquiries should be directed to Alan Fusonie, Symposium Coordinator, National Agricultural Library, Beltsville, Md. 20705. Papers to be presented include:

Post-revolutionary change in Maryland agriculture to 1820 by Edward Papenfuse, State Archivist, Maryland Hall of Records.

John Stuart Skinner and the "American Farmer," 1819-1929: an early proponent of rural sports by Jack Berryman, Professor of Sport History, University of Washington.

Colonial wine-making in Maryland by John McGrew, U. S. Agricultural Research Service.

Colonial bee-keeping by Dewey M. Caron, Department of Entomology, University of Maryland.

Oral history as a source of Maryland agricultural literature by Martha Ross, Department of History, University of Maryland.

Living historical farms and other landmarks to Maryland agriculture past and present by Wayne D. Rasmussen, Economic Research Service, USDA.

Energy and agriculture in the state of Maryland by Bill Anderson, Legislative Representative, Independent Petroleum Association of America.

Closing date for registration is July 25, 1976.

AGRICULTURE DATEBOOK



July 10, 30-31,

Aug. 13-14: *SEMINAR ON PUBLIC RELATIONS FOR LIBRARY AND INFORMATION SERVICE.*

The Catholic University of America, Graduate Department of Library Science. Contact: Dr. John J. Gilheany, Director of Continuing Education, The Catholic University of America, Washington, D.C. 20064.

July 11-16: *FIRST INTERNATIONAL SYMPOSIUM ON FEED COMPOSITION, ANIMAL NUTRIENT REQUIREMENTS AND COMPUTERIZATION OF DIETS*, Logan, Utah. Contact: Lorin E. Harris, Director, International Feedstuffs Institute, College of Agriculture UMC46, Utah State University, Logan, Utah, 84322.

July 13-16: *LIBRARY MANAGEMENT SKILLS INSTITUTE*, AIRLIE, VA. Contact: Association of Research Libraries, Office of University Library Management Studies, 1527 New Hampshire Ave., N. W., Washington, D.C. 20036.

July 18-24: *AMERICAN LIBRARY ASSOCIATION ANNUAL CONFERENCE*, Chicago, Ill.

August 2-6: *COMMUNITY DEVELOPMENT SOCIETY ANNUAL MEETING*, Boise, Idaho. Contact: Howard Tankersley, Extension Service, U. S. Department of Agriculture Rm. 6414 South Bldg., 14th & Independence Ave., S. W., Washington, D.C. 20250.

August 9-September 3: *JOINT MEETING, SOCIETY OF INVERTEBRATE PATHOLOGY AND INTERNATIONAL COLLOQUIUM ON INVERTEBRATE PATHOLOGY.* Queen's University, Kingston, Ont., Canada. Contact: Dr. Peter Faulkner, Dept. Microbiology and Immunology, Queen's Univ., Kingston, Ontario K7L 3N6.

August 9-12: SYMPOSIUM ON "RECLAMATION OF DRASTICALLY DISTURBED LANDS." Ohio Agricultural Research and Development Center, Wooster, Ohio. For more information, write to Dr. Paul Sutton, Ohio Agricultural Research and Development Center, Route 6, Caldwell, Ohio 43724 or to American Society of Agronomy, 677 Segoe Road, Madison, Wisc. 53711.

August 19-27: XV INTERNATIONAL CONGRESS OF ENTOMOLOGY, Washington Hilton Hotel, Washington, D. C. Write: P. O. Box 151, College Park, MD 20740.

August 19-27: EASTERN BRANCH MEETING, ENTOMOLOGICAL SOCIETY OF AMERICA, Washington Hilton Hotel, D. C. Contact: W. A. Allen, Secy.-Treas., 312 Pierce Hall, VPI & SU, Blacksburg, VA 24061.

August 30 - September 2: INTERNATIONAL SYMPOSIUM ON BIOLOGICAL CONTROL OF WEEDS, Univ. of Florida, Gainesville. Contact: Weed Sci. Soc. of Amer., 113 N. Neil St., Champaign, IL 61820.

October 4-8: AMERICAN SOCIETY OF INFORMATION SCIENCES, 39th Annual Meeting, San Francisco Hilton, San Francisco, CA.

October 16: AGRICULTURAL HISTORY OF ONTARIO. 1st Annual Seminar. University of Guelph, Guelph, Ontario, Canada. For details contact: Office of Continuing Education, 824-4120, ext. 3956 or 3988.

October 17-22: INTERNATIONAL ASSOCIATION OF WATER POLLUTION RESEARCH. 8th Conference, Box 2609, G. P. O. Sidney 2001 Australia.

This one day seminar will focus on the farm family and the relationship to land in mid-19th century Ontario as well as change in agriculture in the late 19th century. Specific seminar presentations will deal with the development of popular agricultural education, with historical developments in

horticulture, engineering, and animal and crop production.

November 28 - December 2: ENTOMOLOGICAL SOCIETY OF AMERICA, Sheraton Waikiki Hotel, Honolulu, HI. W. P. Murdoch. Contact: Exec. Secy., Entomological Society of America, 4603 Calvert Road, College Park, MD 20740.

January 25-27, 1977: SOUTHEASTERN BRANCH MEETING, ENTOMOLOGICAL SOCIETY OF AMERICA, Francis Marion Hotel, Charleston, S. C. Contact: S. G. Turnipseed, Sec.-Treas., Edisto Experiment Sta., Blackville, SC 29817.

April 17-22, 1977: SOUTHWESTERN BRANCH MEETING, ENTOMOLOGICAL SOCIETY OF AMERICA, Holiday Inn, Guadalajara, Mexico. Contact: R. L. Harris, Sec.-Treas., USDA, ARS, P. O. Drawer DG, College Station, TX 77840.

April 20-27, 1977: FIRST INTERNATIONAL CONGRESS OF SCIENTIFIC EDITORS. The Hebrew University of Jerusalem, Israel. Write: Miriam Balaban, Chn., P. O. B. 4059, Jerusalem, Israel.

AGRICULTURAL LIBRARIES INFORMATION NOTES is published monthly by the U. S. Department of Agriculture, National Agricultural Library, Beltsville, MD 20705. Leila Moran, Editor. Richard H. Foote, Guest Editor.



SUPPLEMENT: June 1976

PERSONNEL ACTIONS

<u>APPOINTMENTS</u>	<u>Position</u>	<u>Section</u>	<u>Eff. Date</u>	<u>Grade</u>
Deborah Lapeyre	Summer Intern	Ref	5/23/76	GS-5
Elizabeth Ann White	Summer Intern	Proc	5/27/76	GS-5
Dorothy Smith	Summer Intern	Lend	5/27/76	GS-5
James Morgan	Summer Intern	Lend	6/20/76	GS-5
David Hoyt	Mgmt Anal	Mgmt Servcs	6/7/76	GS-7
Candice Tong	Clk Typ Temp	OD	6/17/76	GS-4
Patty Phillips	Clk Typ Temp	Lend	6/18/76	GS-2
Ruben Aargon	Coop Study	OD	6/20/76	GS-4
Marie Rojas	Summer Aid	Lend	6/7/76	-
Wilnette Bailey	Summer Aid	Law	6/14/76	-
Bridgette Mason	Summer Aid	Info Off	6/14/76	-
Gail Cherry	Summer Aid	DC	6/6/76	-
Willie Irby	Summer Aid	FNIC	6/15/76	-
Cynthia Bryan	Summer Aid	Law	6/21/76	-
Louise Austin	Summer Aid	Mgmt Servcs	6/17/76	-
Luann Plummer	Summer Aid	Utiliz	6/23/76	-
Deborah Price	Mail Clk	Mgmt Servcs	7/6/76	-

NAME CHANGE (MARRIAGE)

Margaret Ulasek to Wingard	Clk Typ.	OD	5/22/76	GS-3
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RETIREMENT

Sadie Daughtry	Supr- Lib Techncn	Proc	5/18/76	GS-7
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RESIGNATIONS AND TERMINATIONS

Theresa Thomas	Student Aid	Law	5/21/76	-
Renee White	Student Aid	DC	5/21/76	-
Rose Shorter	Student Aid	FNIC	6/6/76	-
Cathy Pessagno	Student Aid	Utiliz	5/28/76	-
Patricia Tabler	Librn	Ref	5/29/76	GS-7
Evelyn Brown	Librn	Cat	6/8/76	GS-9

TO LWOP

Rosemary Bugher NTE 12/31/76	Clk DMT	OD	5/9/76	GS-5
Rita Leyba NTE 1/2/77	Coop Study	OD	6/6/76	GS-3

QUALITY-WITHIN-GRADE INCREASE

	<u>Position</u>	<u>Section</u>	<u>Eff. Date</u>	
Helen Alexander	Librn	Utiliz	5/9/76	G

RETURN TO DUTY FROM LWOP

Victoria Summers	Lib Aid	Cat	5/3/76	G
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PROMOTIONS

Patricia Goss	Lib Techncn	Utiliz	5/9/76	G
Wallace Olsen	Dep Dir	LC	5/9/76	G
Michael Chisley	Lib Techncn	Law	5/9/76	G
Wallace Reeves	Lib Techncn	Main	5/9/76	G
Brenda Williard	Lib Techncn	Proc	5/23/76	G
Iris Few	Lib Techncn	Proc	5/23/76	G
Maydelle Stewart	Librn	Index	5/23/76	G
Patricia Condon	Chief	Lend	5/23/76	G
Alan Fusonie	Techn Info Spec	Main	5/23/76	G
Irene Glennon	Librn (PT to FT)	Cat	6/20/76	G

PERIPATETIC STAFF

Alan Fusonie attended Living Historical Farms Annual Conference June 6-9, 1976, Haverford College, Haverford, Pa.

Darlene Hackley, Mary Mahler, Philip Turner, Vern Van Dyke and Ronald Walton attended the National Computer Conference in New York City, June 7-10, 1976.

Richard Farley, Gerald Sophar, Wallace Olsen, Harry Kemp, Leila Moran, and Robert Birch attended Special Library Association Conference at Denver, Colorado, June 5-11, 1976.

John Hart attended the 17th Annual Meeting of the Society for Economic Botany June 13-16, University of Illinois at Champaign-Urbana, Illinois.

Ethel Smith attended the Symposium of the Association of Government Accountants in Philadelphia, Pa., June 13-20, 1976.

Ronald Walton attended the Annual Technical Symposium at Gaithersburg, Maryland, June 17-18, 1976.

Spurgeon Terry attended the Annual meeting of the American Association of Law Libraries at Boston, Mass., June 19-24, 1976.

Vern Van Dyke attended the National Board of the Association of Computer Programmers and Analysts annual meeting at Chicago, June 25-26, 1976.

3

Alan Fusonie attended Oral History Meeting of the Mid-Atlantic Region June 26, 1976 (held at the Community College of Baltimore).

Richard Farley, Dean Gamble and Charles Bebee attended the World Food Conference at Ames, Iowa June 26-July 2, 1976.

FILM DATES FOR JULY*

Time: 1:00 p.m. - Repeated 2:00 p.m.

Place: Room 1400

July 13: Focus on Tomorrow. Color. 25 minutes.

Peter Drucker revolves the action around this dilemma: to support an old product which represents a great emotional investment, thereby slowing down development of a new item, or to boldly support the new item and abandon "yesterday's breadwinners."

July 20: More Than Words. Color. 14 minutes.

The basic purpose of the film is to improve the ability of people to get understanding, acceptance, and action from others, and to understand others in turn.

July 27: Future Shock. Color. 42 minutes.

Based on the worldwide best-seller and narrated by Orson Welles, FUTURE SHOCK presents a stunning look at the collision between present and future "occurring now." "Future shock," the film explains, "is a sickness which comes from too much change in too short a time...It's a reaction to change that happens so fast we can't absorb them. It is the premature arrival of the future...and for those who are unprepared, its effects can be devastating."

*There will be no other announcement for July film viewings.

HERITAGE OF AGRICULTURE IN MARYLAND

A Symposium

July 30, 1976

Room 1402

National Agricultural Library

The NAL staff is cordially invited to attend the open session of this Symposium as guests of The Associates NAL, Inc. There is no charge for the open sessions. There will be a charge of \$10.00 to attend the luncheon and to hear the luncheon speaker Dr. Kevin Sullivan, Director of the Chesapeake Bay Center for Environmental Studies. Brochures with registration forms are available in the lobby or from Room 204.

Program

Post-revolutionary change in Maryland agriculture to 1820 by Edward Papenfuse, State Archivist, Maryland Hall of Records.

John Stuart Skinner and the "American Farmer," 1819-1829: an early proponent of rural sports by Jack Berryman, Professor of Sport History, University of Washington.

Colonial wine-making in Maryland by John McGrew, U.S. Agricultural Research Service.

Colonial bee-keeping by Dewey M. Caron, Department of Entomology, University of Maryland.

Oral history as a source of Maryland agricultural literature by Martha Ross, Department of History, University of Maryland.

Living historical farms and other landmarks to Maryland agriculture past and present by Wayne D. Rasmussen, Economic Research Service, USDA.

Energy and agriculture in the state of Maryland by Bill Anderson, Legislative Representative, Independent Petroleum Association of America.

Closing date for registration is July 25, 1976.

UNITED STATES DEPARTMENT OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

EQUAL EMPLOYMENT OPPORTUNITY ADVISORY COMMITTEE MINUTES
Meeting of May 18, 1976

REGULAR MEETING

The regular meeting of the EEOAC, chaired by Robert Butler, was held May 18, 1976. Mr. Butler cited the problems with the absence of our regular secretary, Mrs. Bugher, and, in the absence of our alternate secretary, Diana Claburn, will ask the regular members to fill in. Betty Daniels was commended for substituting at the last meeting.

PRESENT

Robert Butler, Leslie Kulp, Erastine Williams, Gloria Pugh, Celeste Huecker, Mary-Stuart Mellom, Ruth Pyne, Sue Wrightson, Melody Snare, Betty Daniels, Carl Younger, Katherine Daley, Christopher Harris, Wally Reeves, Helen Butler.

MINUTES OF THE APRIL MEETING

The minutes of the previous meeting were unavailable. The April 26 minutes were approved.

APPROVAL OF THE AGENDA

The agenda was approved.

REPORT OF THE EEO COORDINATOR

Mrs. Daley reported that a certificate of appreciation from Northwestern High School was received for participation in their work-study program. However, it was addressed to the Dept. of Agriculture. Mrs. Daley will ask that it be changed to the National Agricultural Library. Mrs. Acosta attended the Departmental EEO Committee meeting for Mrs. Daley.

REPORT OF THE SPANISH SPEAKING COORDINATOR

Mrs. Acosta attended the May 14, 1976 meeting of USDA SSP Coordinators. The subject of the talk was the hiring of people.

REPORT OF THE FWP COORDINATOR

Celeste Huecker stated the workshops held April 30, and May 1, 1976 were most useful. Explanations of the personnel system, its basic function etc. were discussed. She stated that ARS feels these workshops might also be implemented for their staff. Inene Glermon and Gwen Turner also attended.

REPORT OF THE EEO COUNSELORS - no report

REPORT OF EEOAC CHAIRMAN

Evelyn Brown resigned as of May 4, 1976. Dr. Farley requested two nominations from the Committee. Four people were proposed, one in Cataloging Section and three in Indexing Section. Of the latter, one name is to be forwarded to the Director with the name from cataloging. A welcome was extended to Ruth Pyne who is new to EEOAC.

OLD BUSINESS

Review and discussion of Part D of the "NAL Equal Employment Opportunity Action Plan for Fiscal Year 1976" took place. The chairman will prepare a report for approval by the Committee and submission to the Director. A motion was made by Mary-Stuart Mellom that a system be set up for rating of EEO films by viewers to provide feed back on the types of films wanted. The motion was lost on a tie vote.

NEW BUSINESS

The subject of voting by ex-officio members was discussed. A motion was made by Dr. Kulp and passed that members submit in writing to the Chairman their feelings on the subject. These will be distributed to committee members for analysis and the issue voted on at the next meeting.

The meeting was adjourned at 11:45 a.m.

Respectfully submitted
Helen Butler
Substitute Secretary

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RECEIVED

June 1, 1976

EQUAL EMPLOYMENT OPPORTUNITY ADVISORY COMMITTEE

Minutes of May 3, 1976 Meeting

SPECIAL MEETING

This meeting was called by the Chairman to continue the review of the "Narrative Progress Report of NAL on Equal Employment Opportunity July 1 - December 31, 1975."

PRESENT

Idalia Acosta, Robert Butler, Helen Butler, Diana Claburn, Christopher Harris, Celeste Musker, Mary-Stuart Mellon, Wallace Reeves, Melody Snare, Gerald Sophar, Erastine Williams, Sue Wrightson, Carl Younger.

BUSINESS

The review of the Narrative Progress Report was the only proceeding of this meeting. Review of the report began with part IV. Upward Mobility and was completed. The Chairman will summarize the review in a report which will be approved to the Committee before submission to the Director.

